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GEOGRAPHIC SCHOOL BULLETINS

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B. Anthony Stewart

ON MARSHES NEW-FASHIONED BY DRAINAGE, OLD-FASHIONED OX POWER STILL WORKS

Old-fashioned ox teams plow Italy's new-fashioned land in the plains south of Rome where, until their 20th-century reclamation, the Pontine Marshes stretched damp malarial miles. Ancestors of these long-horned, lumbering beasts may have pulled a plow to measure land given Horatius, legendary Roman hero, as a reward for his services "above and beyond the call of duty" in holding a Tiber bridge against the enemy. He was awarded all the land that two oxen could plow in a day. Much of the farm land of central Italy is held in large estates. Instead of living on the farms, like tenant farmers and farm hands in the United States, the workers commute from village homes to the distant fields. This concentration of homes in villages leaves the countryside without small dwellings and gives it a vacant appearance strange to Yanks who have been accustomed to the numerous farm dwellings and tenant houses of United States agricultural districts (Bulletin No. 2).

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GEOGRAPHIC SCHOOL BULLETIN

HOW TEACHERS MAY OBTAIN THE BULLETINS

The Geographic School Bulletins are published weekly throughout the school year (thirty issues) and will be mailed to teachers in the United States and its possessions for one year upon receipt of 25 cents (stamps or money order); in Canada, 50 cents. Originally entered as second-class matter January 27, 1922; re-entered as of April 27, 1943, Post Office, Washington, D. C., under Act of March 3, 1879. Copyright, 1944, by National Geographic Society, Washington, D. C. International copyright secured. All rights reserved. Quedan reservados todos los derechos.

Albania: Perennial Doorstep to the Balkans

THE landing of Allied forces in Albania has brought to the fore again the geographic fact which has affected the fate of that small nation in crisis after crisis. The country is a most convenient doorstep for a side entrance into the Balkan Peninsula from the west.

Albanian shores are just 47 miles from Italy, across the narrow Strait of Otranto where the Adriatic Sea and the Ionian Sea meet. Through the Albanian door access may be had to Yugoslavia to the north and Greece to the south, and the other Balkan nations to the northeast.

From its vantage point beside the Strait of Otranto, Albania has the added advantage of commanding access to the Adriatic from the Mediterranean, either to block or to aid shipping for Italian and Yugoslav points.

From Horseback to Horsepower

The country, a little larger than the State of Maryland, is about 200 miles long from the Yugoslav frontier in the north to the Greek border in the south.

In spite of its importance in international traffic, this long-primitive Balkan country had no modern transport system until World War I. Its mountainous interior had been for centuries accessible only by horseback, and horses were highly valued (illustration, next page).

Technically a neutral in 1914, Albania was a military passageway as well as a battlefield for belligerents on both sides. The little Adriatic nation, which had won its independence from the Turks only two years earlier, was occupied at one time or another by Greek, Italian, Austrian, French, Bulgarian, Serb, and Montenegrin forces.

After the war, Albania suddenly found itself equipped with knowledge of motor transport and the ground work for a system of modern roads. By the end of 1938, the total length of automobile roads was estimated at nearly 1,400 miles. These roads wind over the mountains to link the principal Albanian towns.

The country, however, is still without any railway system. Construction of a railroad was begun in 1926, to stretch inland from the seaport of Durazzo to the capital, Tirana. This project was never completed. As a result of political and financial difficulties, plus the opposition of other transport organizations already operating, work was abandoned in 1929.

A new attempt at railroad-building was reported by the Italians, who invaded and annexed the country in 1939. The projected line was to run from the Adriatic port of Durazzo inland a little beyond Elbasani, in the heart of the country, for the purpose of tapping the near-by iron and chrome mines of Labinot.

Rich but Undeveloped Resources

Already completed by 1940 was a 45-mile pipe line, through which oil is carried from inland Petrolia to the port of Valona, situated about 50 miles from Italy across the Strait of Otranto.

Albania holds considerable mineral wealth, which is as yet undeveloped. In petroleum production the country advanced sharply during the 1930's to reach by 1938 the rank of sixth among oil-producing nations of Europe. Some copper, iron, coal, and salt are also produced.

Wild and rugged, with some of its mountains reaching more than a mile to-

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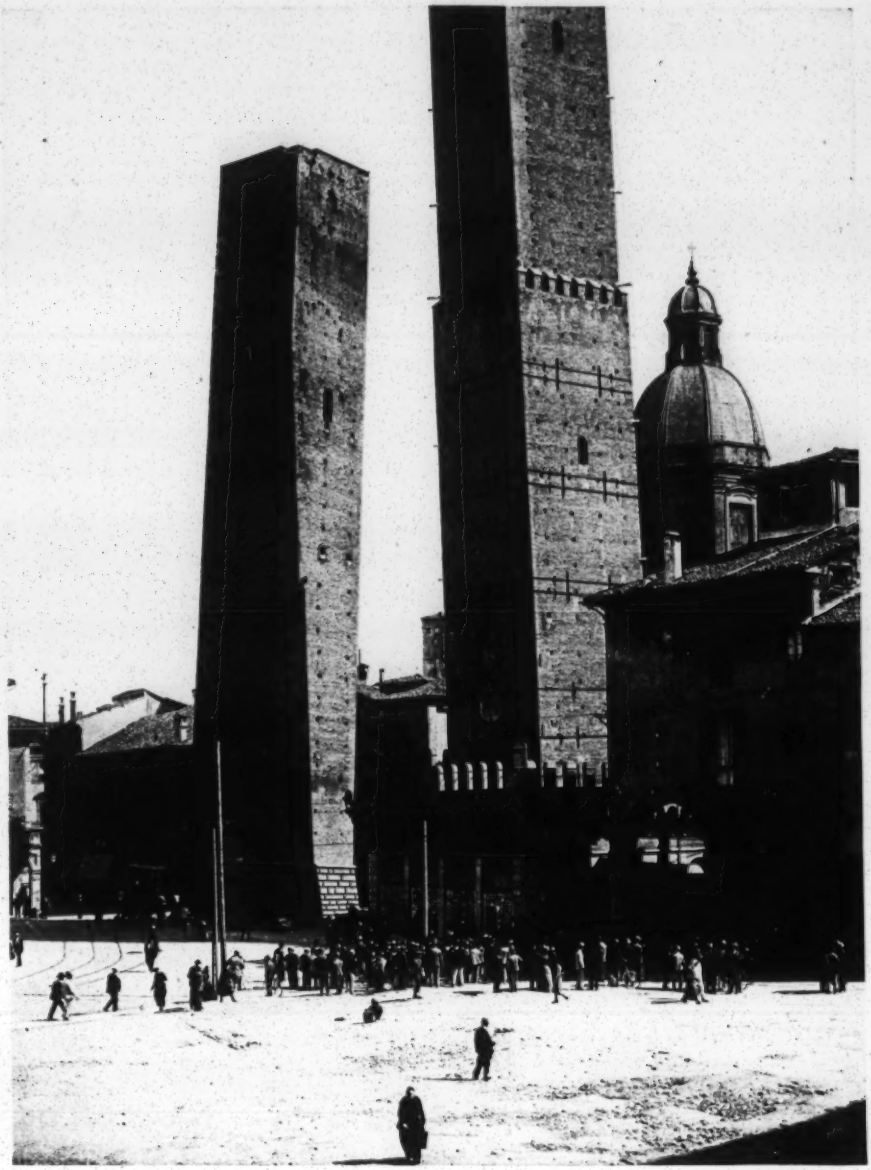

Donald McLeish

BOLOGNA HAS SOMETHING TO WRITE HOME ABOUT: TWO LEANING TOWERS

American soldiers who fought their way into Pisa had a chance afterwards to write home about that Leaning Tower. But when they reach Bologna they may see such structures in pairs. Once the city had 180 towers, built as family fortresses by squabbling nobles. Most of the structures that earthquakes didn't shake down were demolished by angry citizens, in protest at having missiles tossed down. The Torre degli Asinelli (right) rises 320 feet, and tilts about 4 feet from the perpendicular. The smaller Torre Garisenda, just 163 feet high, has a more alarming slant of 10 feet. The latter is referred to by Dante in his *Inferno*, as a simile for a stooping giant. Their respective tilts make the towers appear to lean toward each other. These strange structures are among the sights to be seen by American forces after their fierce fighting is over in central Italy (Bulletin No. 2).

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Where Are the Yanks? 15. Central Italy

(This is a supplement to Vol. XXII's series of twelve articles called "Where Are the Yanks?", about regions where American service men and women are stationed.)

YANKS who are serving in Italy have come to know at first hand several of the country's distinct regions—Campania, around Naples; Latium, around Rome; and Tuscany, province of Italy's famous hill towns (map, next page).

Salerno, the Yanks' first beachhead on the European continent, is a doorstep to the Campanian plain surrounding Naples. This fertile land strip between the Apennines and the Tyrrhenian Sea supports Italy's densest population—one of the most concentrated in the world.

The Apennine range, that long, high mountain chain forming the backbone of the Italian Peninsula, shields the Campanian plain from the cold north wind, called the *bora*, and at the same time imprisons the *sirocco*, the warm south wind from the Sahara. Wheat, olives, and grapes are the principal crops of this rich agricultural region.

Isle of Capri a Rest Spot for Yanks

West of the Yanks' first toehold, the rocky Sorrento Peninsula extends into the Tyrrhenian Sea, forming the southern shore of the Gulf of Naples. The resort towns of Sorrento and Amalfi stand on the high, steep cliffs of the peninsula's northern side. The Tyrrhenian Sea is that triangular section of the Mediterranean which washes Italy's southwestern shores from the Island of Elba to the toe of the boot at Reggio Calabria, and is walled in by Sicily on the south and Sardinia and Corsica on the west.

Beyond the tip of the Sorrento Peninsula lies the song-celebrated Isle of Capri, where some American service men and women have spent rest periods.

The beachhead at Anzio and the break-through at Cassino introduced Yanks to the province in which Rome stands—Latium, or Lazio in Italian. The Campagna di Roma, the plain around Rome, was a fertile district which fed the city in its early days. It was spoked by roads and aqueducts, some of which—like the Appian Way—are still in use. After the fall of ancient Rome, drainage fell into disrepair and swamps gradually covered previously fruitful land. For centuries malaria depopulated the area. In 1871, Rome had only 229,000 inhabitants. Since Italy became a united kingdom in 1870, drainage and reclamation works have improved the health problem and restored some of the land to use. The Pontine Marshes, near the Anzio beachhead, were the last area to be drained (illustration, cover). Rome, as capital of the united country, has regained and surpassed the million mark of its ancient population.

Tuscany a Land of Olives and Vines

The prewar metropolitan wealth of Rome was in direct contrast to the poverty of the surrounding country. Unlike the fertile farm land in the Naples area, the Campagna di Roma is still largely given over to grazing of sheep and cattle. Though cold and subject to snow in winter, the region suffers from such oppressive heat and drought in summer that peacetime visitors were advised to avoid Rome between May and September. In spring and autumn the Tiber usually overflows.

North of Latium the Yanks entered Tuscany and raced to the approaches of the Arno Valley in five weeks after taking Rome. The hilly olive- and vineyard-covered land they traversed has a mild climate, fertile valleys, healthful cultivated highlands, and prosperous manufacturing and trading cities.

The history of Tuscany and the adjoining Umbria goes back to Etruscan times, 500 B.C., when the hill cities of west-central Italy rivalled Rome. The dialect of the Tuscans became accepted as the language of Italian writing and conversation largely because of its use by Dante and Petrarch. Perugia, Siena, and the Arno valley cities of Pisa and Florence became great art centers in medieval and Renaissance days. Florence, still a large city, is second only to Rome as a center of Italy's culture. Pisa's many art treasures are overshadowed in public interest by the famous Leaning Tower.

Volterra, Cortona, Arezzo, Chiusi, and Perugia were members of the Etruscan Federation. Standing on their cliff-top heights, they are faint reminders to Yanks from New Mexico of Indian villages of the southwestern United States, built atop mesas for protection.

The Arno River drains a valley largely used for cattle grazing and horse breeding. The hillsides, intensively cultivated, produce olives, grapes, and mulberry leaves (for silkworms).

The land between Pisa and the sea has been filled in by silt from the Arno's floodings.

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ward the skies, Albania offers a difficult and precarious existence to its more than a million hardy, aggressive citizens. Life became even more precarious after the occupation by Italian armies on Easter in 1939. The Italians used the country as a base for the attack on Greece in 1940, and later the Greeks pushed Italian forces back into Albania. Since then guerrilla activity has kept the country turbulent.

Tobacco, corn, wheat, and barley, fruit and olive trees, vineyards, and even cotton grow in Albanian soil. There are good pasture lands, supporting cattle, sheep, and goats. There are stands of valuable timber. Scarcely 1,300 square miles of the country, however, are normally under cultivation.

Note: Albania appears on the National Geographic Society's Map of Central Europe and the Mediterranean. A price list of maps may be obtained from the Society's headquarters in Washington, D. C.

For additional information on this Balkan country, see "Europe's Newest Kingdom," in the *National Geographic Magazine* for February, 1931.* *(Issues marked by an asterisk are included in a special list of Magazines available to teachers at 10¢ each in groups of ten.)*

See also the following GEOGRAPHIC SCHOOL BULLETINS: "Albania Struggles to Divorce Italy as Allied Bombs Fall," December 6, 1943; "Mountainous Albania a Reluctant Aid to the Axis," November 16, 1943; and "Albania Continues in Historic Battlefield Role," January 13, 1941.

Bulletin No. 1, October 16, 1944.

Melville Chater

HORSES HELP MAKE THE BRIDLE PATH A WARPATH IN ALBANIA

In 1938, the year before World War II reached Albania at the muzzle of Italian guns, the country had some 54,000 horses—a small number, but a larger supply in proportion to the population than Italy had. Not until the past two decades did the country have a road system adequate for vehicle traffic. The horse was a stand-by for the Albanian mountaineer in traveling the winding mountain trails, for feuding, for smuggling, for business at the nearest market town, or for defense of his isolated valley against attack. Now a good mount has special value to guerrillas aiding the Allied forces in Albania. The capital of horse-trading in the mountainous country is traditionally Corizza (Korçë) in eastern Albania not far from the Greek frontier. The horses marketed there in normal times wore crude saddles of wooden slats. The turbans and fezlike hats worn by buyer and seller are reminders of Albania's centuries of Turkish rule, terminated only in 1912.

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Kweilin, American Flyers' Lost Eyrie in Kwangsi

MOST Americans first realized the importance of Kweilin when they learned that U. S. Fourteenth Air Force bases in the vicinity had been destroyed and abandoned in the face of imminent capture by attacking Japanese armies.

Kweilin is an ancient walled city, old a thousand years ago, deep inland among the hills in the northeast part of sub-tropical Kwangsi, the central one of China's three southernmost provinces.

Until 46 years ago no American, perhaps no Occidental at all, had entered Kweilin's substantial walls. In 1898 an American missionary and his wife reached the city. Before the war with Japan, however, there was little contact with the outside world because of travel difficulties and political disturbances.

"Cannibal Railway" of Paramount Importance

The U. S. Fourteenth Air Force made Kweilin one of the secret South China bases from which planes could attack Japanese supply lines in surrounding provinces and across the South China Sea as well.

Though the first American visitors had to reach the city by slow river boat, creaking cart, and jolting sedan chair, the modern Kweilin is a transportation center of major importance to the war in China.

Since China's nationwide road-building program got under way about 1930, Kweilin has been provided with four major highways which radiate from the city like spokes. One branches southwest and reaches the frontier of French Indo-China. The newest is the Kweilin-Sansui road, begun in 1940, which extends northwest to touch at Sansui the highway system reaching Chungking.

Of paramount importance in military strategy is the Hunan-Kwangsi Railway, for which Kweilin is the center. This was the first railroad built by China at war, begun in 1938. The line was to reach from Hengyang, on the Canton-Hankow Railroad, through Kweilin to French Indo-China. Work began from the northeastern and southwestern ends at the same time, but when the Japanese threatened the central portion, the southern section was torn up. Some 330 miles of railway in the north actually reached completion, from Hengyang through Kweilin to Liuchow.

War shortages made the railroad a "cannibal," devouring its own kind in order to grow. Rails, sleepers, and bridges were taken from dismantled lines.

District of Cinnamon Trees and Black Banners

With about 100,000 people before the war, Kweilin ranked third among Kwangsi's cities, after Wuchow, the leading river port, and Nanning, the province's capital under the prewar regime of the Chinese Republic. As the Japanese approached Nanning, the capital was returned to Kweilin, which had been the government center for the province under the Manchus.

The city is the site of an ancient settlement, where surly southerners through the centuries resisted the gradual conquests of such newcomers from the north as the Mongols and the Manchus. One inscription indicates that a temple was built there 1,300 years ago. The city was walled to resist invasion about the 14th century. Nevertheless, a wily general of the Ming period conquered Kweilin by damming the river beside it and floating his soldiers over the flooded walls. General Sun Yat Sen entered the city in December, 1921.

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For a while in the Middle Ages the city-state of Pisa was the western world's greatest naval power. Now Livorno (Leghorn) is the chief port of the region.

Across the Apennines to the north lies the plain of the Po River, dotted with important industrial cities such as Bologna (illustration, inside cover) and Milan.

The Italian boot from the Arno south is slightly larger in area than the State of New York. Before the war it had about four million more inhabitants than the Empire State.

Note: Italy is shown on the Society's Map of Central Europe and the Mediterranean. It is presented also on the Society's Map of Classical Lands of the Mediterranean, on which both ancient and modern names appear.

See also the following GEOGRAPHIC SCHOOL BULLETINS: "Italy Is 'Surprise Stocking' of Varied Weather Samples," March 13, 1944; "Where Are the Yanks? 3. Sicily and Southern Italy," March 6, 1944; and "Beachhead South of Rome a Historic Battleground," February 28, 1944.

Bulletin No. 2, October 16, 1944.

ITALY STEPS DEEP INTO THE MEDITERRANEAN BETWEEN FOUR SMALLER SEAS

Italy, with a longer Mediterranean coast line than that of any other country, steps deep into that big sea through four smaller seas that surround the peninsula's shores. Islands separate these outlying seas: little Elba and big Corsica (of Napoleonic fame) stand between the Ligurian Sea and the Tyrrhenian Sea. Under the boot the Ionian Sea stretches from Sicily eastward to Corfu and Greece. The Adriatic outlines Italy's shores on the northeast.

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Losing Romania Wins Resources of Troubled Transylvania

THE richest Balkan nation in resources of oil and grain, Romania on September 12 signed an armistice which transferred the country from the diminishing list of Axis satellites to the roster of allies of the United Nations. This made Romania the second nation to switch to the Allies, almost exactly a year after Italy's change.

Terms of the armistice made further alterations in the boundaries of this war-carved land. The northeastern frontier was defined according to a 1940 agreement with the Soviet Union, by which the U.S.S.R. was in possession of Bessarabia and northern Bucovina.

As to the northwestern frontier, however, the armistice terms allowed Romania a gain, by voiding the Nazi-engineered Vienna agreement which took the northern 44 per cent of Romania's Transylvania triangle and awarded it to Hungary. This provision of the armistice opens the way for returning to Romanian rule a wedge of forested mountain land which is valued for its minerals, manpower, timber, and historic traditions.

Saxons and Hungarians Settled at Old Frontier

The part of Transylvania in question includes 17,400 square miles, the home of more than two and a half million people. It was contained in a mountainous triangle outlined roughly by a line drawn from the Hungarian border south of Salonta to the center of Romania at Brasov, then northwestward back to the frontier east of Viseul-de-Sus.

The troubled status of Transylvania, torn between the two adjoining nations, has been aggravated for centuries by the fact that three nationalities live there, Romanians, Hungarians, and German-speaking Saxons (illustration, next page). The Hungarians are most numerous near the center of Romania. Their ancestors were induced to settle there some 800 years ago to defend the frontier, when this region came under the rule of medieval Hungary.

The capital and chief city of Transylvania, Cluj (105,000 people), and two of the four other largest cities, Oradea and Satu-Mare, are in the pie-slice of land slated for return to Romania. With the land will go resources of timber, minerals, industries, orchards, vineyards, pasture lands, and grainfields. It was the gold and silver mines of Transylvania, rather than the currently esteemed petroleum in southeastern Romania, that lured the Emperor Trajan to conquer the land and weld it into ancient Rome's empire as the province of Dacia.

Ancient Gold and Modern Aluminum Treasures

The tall forests of Carpathian mountainsides—pine, oak, and beech—have helped make Romania a timber exporter, with wood products forming a quarter of the country's industrial output in times of peace. The disputed wedge of Transylvania contains three of Romania's five largest sawmills.

The map of Transylvania is lightly peppered with place names that include *ocna*—"salt mine." These indicate generous deposits of salt crystals, almost 99 per cent pure sodium chloride, which could supply all of Europe's demands and part of Africa's. Among the deposits are those at Ocna-Sugatag, Costiui, Turda, and Ocna-Dejubui near Dej.

Of the petroleum wealth that makes Romania Europe's chief oil-producing nation outside the U.S.S.R., there is a small Transylvanian trickle at Sacel in the

Kweilin means "Cinnamon Forest," with a connotation in Chinese of literary excellence, as the laurel wreath or the palm denotes achievement in western speech. The river flowing past is the Kwei Kiang, or Cinnamon River.

The caves and gorges in the eroded limestone hills around Kweilin (illustration, below) have at times been the hideouts of brigands, including the notorious Black Banner bandits, soldiers discharged without pay after fighting the French in French Indo-China.

The Eastern Gate of the city walls opens beside the Kwei, where a pontoon bridge crosses the river and houseboats rock at anchor.

Note: Kweilin and its railroad and road systems are shown on the Society's new Map of Southeast Asia, the supplement to the October, 1944, issue of the *National Geographic Magazine*.

For information about Kweilin and other parts of Kwangsi Province, see "Landscaped Kwangsi, China's Province of Pictorial Art," in the *National Geographic Magazine* for December, 1937. Other recent material on China has been published in "Exploring Wild West China" in the June, 1944, *Magazine*; "6,000 Miles over the Roads of Free China," March, 1944; and "China Opens Her Wild West," September, 1942*.

See also these GEOGRAPHIC SCHOOL BULLETINS: "China Goes West to Win," October 18, 1943; "Kwangsi Turned the Japanese Tide from South China," November 25, 1940; and "Kwangsi Province, China's 'Dixie,' Goal of Expedition," May 10, 1937.

Bulletin No. 3, October 16, 1944.

T. C. Lau

HILLS "GROW" LIKE RHINOCEROS HORNS FROM KWEILIN'S BROW

Steep limestone hills, eroded by weather and pockmarked with caves, lift vertical cliffs above the soil in rugged sugarloaf outlines like giant rhinoceros horns. When Chinese artists painted such hills in misty landscapes, foreigners considered the paintings fantasy, for few have visited the inaccessible fastnesses around Kweilin in northeast Kwangsi. Hills around the city have such names as White Crane and Parrot Hill (background), Gold and Purple Good Luck Rock, and Cave of the Seven Stars. Roofs of the city's one-story houses are almost hidden by the trees.

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Geo-Graphic Brevities

ARNHEM, AT GATEWAY TO GERMANY, IS NETHERLANDS BATAAN

ARNHEM, near the Netherlands' east frontier, has taken its place in history beside Dunkerque and Bataan. There Allied paratroopers, cut off by the Germans, made a last-ditch stand comparable to that of the British at Dunkerque, the Americans at Bataan, and the Lost Battalion of World War I. They carried on a tradition of valor set by England's 16th-century poet-soldier, Sir Philip Sidney, who died at Arnhem, fighting for the Netherlands' freedom from Spain.

Arnhem is the northern post of the gateway from the Netherlands into Germany around the Siegfried Line. Capture of the Nijmegen bridge across the Waal, southern post of the gate, was made possible by the heroic stand at Arnhem.

Capital of the province of Gelderland, Arnhem stands on the right bank of the lower Rhine (Neder Rijn, called the Lek farther downstream), near where the IJssel branches off. The city's position in the Rhine delta—with river transportation connecting it with Cologne, Amsterdam, and Rotterdam, and main highways and railways radiating from it—gives it commercial importance. Fertile soil of the region has made Arnhem a busy market center. The prewar population of 89,000 was employed in the manufacture of mirrors, paper, scientific instruments, chemicals, and electrical supplies.

In the old part of the city are the 16th-century town hall, the market place, and the weigh-house. The old moat has been made part of the park system.

The absence of several features characteristic of many Netherlands cities, such as canals and uniform architecture, gives Arnhem an almost foreign atmosphere. Arnhem is a cultural center and a wealthy residential city. Many Netherlanders retired there with fortunes made in the East Indies and built magnificent homes. The Veluwe Hills, backdrop of Arnhem, rise 350 feet above the marshy countryside and give the region the title of the "Dutch Switzerland."

Arnhem entered history in the 9th century. In the 13th century it joined the Hanseatic League. Although it was early known as "Arnhem the Joyous," its history soon belied its title, for its streets and ramparts were bloodstained under Spanish, French, and Prussian rule.

Note: Arnhem and the Rhine delta country are shown on the Society's Map of Germany and Its Approaches. For additional information, see "Low Countries Await Liberation," a series of 10 photographs of Belgium and the Netherlands, in the *National Geographic Magazine* for August, 1944; and "Behind Netherlands Sea Ramparts," February, 1940*.

* * * * *

MODERN TANK HARKS BACK TO BATTERING RAM

IN THE assault against Germany, the tank break-through is the modern army's battering ram. The Allies are now equipped with tanks specially designed to overcome coastal defenses, with new amphibious tanks, and other new types.

The modern tank was originally designed as a "land-battleship" to answer the challenge of barbed-wire entanglements and machine-gun nests.

A British and French development, the tank was first tried in September, 1916, by British forces in the Somme sector of France. Weighing 28 tons at birth, it developed into a decisive factor in the first World War.

Like other equipment for mechanized warfare, tanks could not have developed without the earlier invention of internal combustion motors. Another prerequisite

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north. Satu-Mare, Tleagd, and Târgul-Mures have oil refineries.

The transferred wedge of Transylvania has natural gas fields from which pipes bring newly developed industrial centers a constant supply of gas with a methane content among the world's highest, from 97 to 99 per cent. There is a cluster of gas wells around Târgul-Mures, which is the site of gas, coking, and metal works in addition to its refinery.

There are ten gold and silver mines and eight copper mines in the Somesul basin in the north, around Baia-Mare. At the gold mines around Baia Sprie, lead and antimony are among the by-products. A sulphuric acid plant at near-by Ferneziul-de-Jos produces chemicals for the metal industries.

Other minerals are coal around Negresti in the north, Zalău in the south, Sfântul-Gheorghe in the east; iron in the Somesul valley; and bauxite, the ore of aluminum, in the western mountains.

Cement, that stand-by of modern construction, is made at Turda.

Note: Romania is shown on the Society's Map of Europe and the Near East.

For further information, see "An American Girl Cycles Across Romania," in the *National Geographic Magazine* for November, 1938*; "The Spell of Romania," April, 1934*; and "Transylvania and Its Seven Castles," March, 1926; see also, in the GEOGRAPHIC SCHOOL BULLETINS, April 24, 1944, "War-Changed Romania a Battlefield Again."

Bulletin No. 4, October 16, 1944.

Dorothy Hosmer

SAXON DRESS AND ROMANIAN BREAD MEET AT DINNER IN TRANSYLVANIA

Siebenburgen, "Land of the Seven Castles," is what Saxon inhabitants call Transylvania, because their ancestors settled there in seven fortified cities defended by castles, like the pioneer forts of the early United States stockaded against Indians. Saxons came there six centuries ago at the invitation of Hungarian kings to strengthen border defenses against Moslem marauders sweeping across Romania from the southeast. The seven castles were placed to protect the four most important passes through the mountains. Before Transylvania came under Romanian rule in 1918, the Saxons enjoyed special privileges from which Romanian residents were barred. Saxon costumes and speech have been preserved through the centuries. The Saxon matron wears an embroidered cap tied snugly under her chin, in contrast to the kerchief of the Romanian peasant. On special occasions, such as this outdoor church dinner at Petris, north of Târgul-Mures, she may cover her cap with a white veil. She eats soup with a silver spoon instead of the wooden ladle used by rural Romanian neighbors.

was track-laying treads, for a better ground grip, invented in the United States and first used on farm tractors.

The tank's basic idea of affording protection to fighting men is as old as warfare. It goes back to early Greek and Roman armor, to ancient chariots, to armored horses of the Middle Ages. Tanks have been called motorized cavalry.

In ages B.C., when working their battering rams against a walled city, besiegers were protected by movable sheds or penthouses, sometimes fortified by iron plates. In medieval times protected siege wagons were developed.

Ancient Roman siege towers had battering rams installed in the lower part. These towers were made of wood, mounted on wheels, and often plated with iron. With infantrymen on platforms at different levels, the tower was pushed against the wall of the besieged city. Missiles from higher floors knocked out the defenders. Then the soldiers pushed a drawbridge out to the wall and swarmed over.

Military men of the 16th century designed tanklike amphibious boats on wheels which could be drawn by horses to besieged castles, then propelled across the moats by side paddle-wheels. They had forward guns to blast a landing.

With its turret, the tank acknowledges indebtedness to the *Monitor*, "cheese-box on a raft" of Civil War days. For its armor credit also must be given to the *Merrimac*, though ship armor might be traced back to the Vikings.

Note: For additional information, see "What Do You Know About Tanks?" in the GEOGRAPHIC SCHOOL BULLETINS, November 23, 1942.

Bulletin No. 5, October 16, 1944.

Headquarters Armored Force

TANKS CAN LEAD THE ASSAULT AGAINST GENERAL WINTER

The U. S. Army's M-4 or General Sherman tank, weighing 28 tons, is equipped with a 75-mm. cannon in the turret which can be swiveled completely around to shoot in any direction. Scarcely a rivet is visible, since most of the metal hull is welded together, a recent improvement which makes the tank more durable. To find what hazards the M-4 and its crew must stand in winter combat, this tank was tested in extreme cold in the Medical Research Laboratory, Fort Knox, Kentucky. The men wear furs and parkas of Arctic weight.

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